

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method of transmitting a code division multiple access (CDMA) frame in a cellular communications network, the method comprising ~~the steps~~ of:

providing the CDMA frame so as to include a plurality of slots and at least a portion of a transmission gap (TG);

defining the transmission gap using both a reduced spreading factor (SF) and increased redundancy of information bits to be transmitted; and

transmitting the frame, including the plurality of slots, on a channel.


2. (Currently amended) The method of claim 1, wherein said transmitting step comprises transmitting the frame on an uplink from a mobile station (MS) to a base station (BS) in the network; ~~and~~

~~said defining step includes defining the transmission gap using a reduced spreading factor and increased redundancy.~~

3. (Currently amended) The method of claim 2, wherein the channel is a ~~an uplink~~ dedicated physical data channel.

4. (Original) The method of claim 2, wherein the transmission gap is located between first and second slots in the frame.

5. (Original) The method of claim 2, further comprising reducing the spreading factor by a factor of two, and increasing the redundancy of information bits to be transmitted so that the transmission gap length is less than a length of half the frame.

 6. (Original) The method of claim 5, wherein the frame is a radio frame comprising fifteen time slots.

7. (Currently amended) The method of claim 1, wherein the frame is transmitted on one of an uplink and a downlink;

the method further comprising spreading the information bits to be transmitted on a higher rate data signature sequence to produce ~~produced~~ a coded information signal; and

intermittently transmitting coded information signals in a compressed mode using the reduced spreading factor with a reduced spreading ratio, wherein a frame transmitted in the compressed mode includes a first part having a time duration of less than a duration of the entire frame and a second part also having a time duration of less than the duration of the entire frame.

8 (Currently amended) A method of transmitting spread spectrum frames, the method comprising:

providing data to be transmitted on a channel,

spreading a first portion of the data on a higher rate sequence using a first spreading factor to produce a first coded information signal including a first frame including a plurality of slots,

transmitting the first frame, including all slots thereof, on the channel;

forming a compressed mode frame by spreading a second portion of the data on a higher rate sequence using a second spreading factor to produce a second coded information signal including a second frame, wherein the second spreading factor is less than the first spreading factor so that the second frame includes at least a portion of a transmission gap having a length less than half the number of total slots in the second frame;

defining a length of the transmission gap using both increased redundancy of bits on a transport channel and the second spreading factor so that the transmission gap has a length less than a length of half the second frame; and

transmitting the second frame on the channel.

9. (Canceled)

10 (Currently amended) A compressed mode spread spectrum frame to be transmitted on a channel, the frame comprising:

AB
a plurality of time slots;

a transmission gap provided between first and second ones of the time slots in the frame; and

wherein a length of the transmission gap is less than half of a time length of the entire frame, with the transmission gap length being defined at least in part by using a first spreading factor reduced by a factor of two relative to a second spreading factor which also may be used on the channel, and increased redundancy of bits to be transmitted, and the frame is either an uplink frame or a downlink frame.

11. (Canceled)

AC
12. (Currently amended) A method of transmitting a compressed mode frame in a communications network, comprising ~~the steps of~~:

forming ~~[[a]]~~ the frame including a plurality of slots and a transmission gap of length TGL;

increasing a bit or code rate to form the transmission gap and create room for redundant format indicator bits; and

repeating a number of format indicator bits from a first slot in the frame in a second slot of the frame.

13. (Original) The method of claim 12, further comprising determining which format indicator bits are to be repeated based at least in part upon the location of the transmission gap, and wherein the frame is transmitted on either an uplink or downlink channel.

14. (Original) The method of claim 12, further comprising repeating format indicator bits from the first slot which is located immediately following the transmission gap, in the second slot which is located proximate an end of the frame.

15. (Currently amended) The method of claim 12, wherein the format indicator bits are Transport Format Combination Indicator (TFCI) bits, and wherein the frame is transmitted on an uplink physical control channel.

16. (Currently amended) An apparatus including a transmitter for transmitting a code division multiple access (CDMA) frame from a mobile station to a base station in a cellular communications network, the apparatus comprising:

means for forming the frame so that the frame includes a plurality of time slots and at least a portion of a transmission gap (TG);

means for forming ~~[[a]]~~ the transmission gap (TG) having a transmission gap length (TGL) in the frame by using a reduced spreading factor (SF) and an increased redundancy of information bits to be transmitted; and

a transmitter for transmitting the frame from the mobile station to the base station.

17. (Currently amended) The apparatus of claim 16, wherein said means for forming at least a portion of ~~[[a]]~~ the transmission gap comprises a spreading circuit and a rate matching circuit.

18. (Currently amended) An apparatus for transmitting an uplink compressed mode frame in a CDMA based communications network, the apparatus comprising:

means for forming the uplink compressed mode frame so as to include a plurality of slots and a transmission gap of length TGL;

means for repeating a number of format indicator bits from a first slot in the frame in a second slot of the frame; and

wherein the format indicator bits to be repeated are determined at least in part based upon at least one of (a) the length of the transmission gap, and ~~[[(ii)]]~~ (b) a location of the transmission gap.

19. (Currently amended) An apparatus for transmitting a spread spectrum frame in a cellular communications network, the apparatus comprising:

a spreading circuit for spreading bits to a bit rate using a code with a spreading factor and including the spread bits in [[a]] the frame which includes a plurality of time slots and a transmission gap therein; and

24 Cont a rate match at least partially defining a length of the transmission gap using increased redundancy of at least some of the bits.

20. (Original) The apparatus of claim 19, wherein the spread spectrum frame is a CDMA frame, and wherein the transmission gap is located between first and second slots of the frame.

21. (Original) The apparatus of claim 19, further comprising a transmitter for transmitting the frame in an uplink from a mobile station to a base station in the cellular communications network.

22. (Original) The apparatus of claim 19, wherein the length of the transmission gap is variable via said rate match.

23. (Currently amended) A mobile station for use in a cellular communications network, said mobile station comprising:

AP Cont
a spreading circuit spreading bits to a bit rate using a code with a spreading factor and including the spread bits in a frame which includes a plurality of time slots and a transmission gap therein; and

a rate match at least partially defining a length of the transmission gap using increased redundancy of at least some bits.

24. (Original) The mobile station of claim 23, wherein said mobile station is a cellular phone.

✓
25-26. (Canceled)

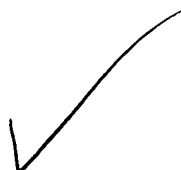
AS
27. (Currently amended) A method of transmitting a compressed mode frame in a communications network, comprising the steps of:

forming [[a]] the frame including a plurality of slots and a transmission gap of length TGL; and

repeating a number of control bits from a first slot in the frame in a second slot of the frame in order to increase redundancy of control bits.

28. (Original) The method of claim 27, further comprising transmitting the frame on either an uplink or downlink.

29. (Currently amended) The method of claim 27, further comprising determining which control bits are to be repeated based at least in part upon the location of the transmission gap in the frame, and wherein the control bits are at least one of Transport Power Control (TPC) bits, Transport Format Combination Indicator (TFCI) bits, and pilot bits.



30-31. (Canceled)